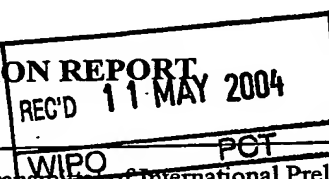


PATENT COOPERATION TREATY  
PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)



Applicant's or agent's file reference 42494/29 KM	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416).	
International Application No. <b>PCT/NZ2003/000219</b>	International Filing Date (day/month/year) 26 September 2003	Priority Date (day/month/year) 27 September 2002
International Patent Classification (IPC) or national classification and IPC Int. Cl. <sup>7</sup> C12N 1/14, A01N 63/04		
Applicant AGRESEARCH LIMITED et al		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 3 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheet(s).

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 21 January 2004	Date of completion of the report 28 April 2004
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer  <b>JANE MCHENRY</b> Telephone No. (02) 6283 2091

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/NZ2003/000219

## I. Basis of the report

### 1. With regard to the elements of the international application:\*

- ☒ the international application as originally filed.
- ☐ the description, pages , as originally filed,  
pages , filed with the demand,  
pages , received on with the letter of
- ☐ the claims, pages , as originally filed,  
pages , as amended (together with any statement) under Article 19,  
pages , filed with the demand,  
pages , received on with the letter of
- ☐ the drawings, pages , as originally filed,  
pages , filed with the demand,  
pages , received on with the letter of
- ☐ the sequence listing part of the description:  
pages , as originally filed  
pages , filed with the demand  
pages , received on with the letter of

### 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

### 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

### 4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/fig.

### 5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/NZ2003/000219

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

Novelty (N)	Claims 1-29	YES
	Claims	NO
Inventive step (IS)	Claims 1-29	YES
	Claims	NO
Industrial applicability (IA)	Claims 1-29	YES
	Claims	NO

## 2. Citations and explanations (Rule 70.7)

The invention appears to reside in *Neotyphodium* endophytes that form combinations with tall fescue when artificially inoculated. These combinations have reduced toxicity to grazing animals but still produce sufficient levels of at least two alkaloids selected from the group agroclavine; setoclavine; isosetoclavine; and combinations thereof.

The following documents from the International Search Report are referred to in this report:

D1 = US 6111170

D2 = Parish J A *et al.* (2003) J. Anim. Sci. 81: 1316-1322.

Document D2 was published after the priority date of the present application. The priority document was not available to date. If the priority date is found invalid this document may become relevant to the present claimed invention with respect to inventive step.

**NOVELTY & INVENTIVE STEP**

D1 is considered the closest prior art. D1 does not disclose the specific *Neotyphodium* endophyte species claimed. This document discloses *Neotyphodium* endophytes that combine with tall fescue. The combinations have improved resistance to invertebrate pests and reduced toxicity to grazing animals. The endophytes do not accumulate the toxic alkaloid ergovaline like other endophytes (see col 5 lines 18-24 and Table 3 col 7). However, the applicant asserts that the endophytes disclosed in D1 do not produce or barely produce ergot alkaloids and clavine compounds, such as agroclavine, setoclavine, isosetoclavine or combinations thereof (see Table 1 of the present application). These endophytes have a different chemotype and genotype to those claimed in the present application and show different pest resistance characteristics. Therefore claims 1-29 are considered novel and inventive in light of D1.